**REPORT Part – III**

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In this round, we generated Face2Face forged videos and ran the pipeline to check the accuracy using both the Meso4 and MesoInception models. Following results are obtained.

We have downloaded the dataset of forged videos from the below link:

<https://www.kaggle.com/competitions/deepfake-detection-challenge/data?select=test_videos>

**RESULTS:**

**Below is the output for**

with mesoinception\_f2f classifier:

Predicted : [[0.04141179]]

Real class : [0.]

with meso\_f2f classifier:

Predicted : [[0.8810234]]

Real class : [1.]

Dealing with video aassnaulhq.mp4

Face extraction warning : 0 - no face

Face extraction warning : 10 - no face

Face extraction warning : 20 - no face

Face extraction warning : 30 - no face

Face extraction warning : 40 - no face

Face extraction warning : 50 - no face

Face extraction warning : 60 - no face

Face extraction warning : 70 - found face in full frame [(80, 469, 155, 395)]

Face extraction warning : 80 - found face in full frame [(174, 931, 308, 797)]

Face extraction report of not\_found : 9

Face extraction report of no\_face : 7

Predicting aassnaulhq.mp4

2022-12-04 20:26:40.263287: W tensorflow/core/framework/cpu\_allocator\_impl.cc:80] Allocation of 18087936 exceeds 10% of free system memory.

2022-12-04 20:26:40.280015: W tensorflow/core/framework/cpu\_allocator\_impl.cc:80] Allocation of 48234496 exceeds 10% of free system memory.

2022-12-04 20:26:40.397870: W tensorflow/core/framework/cpu\_allocator\_impl.cc:80] Allocation of 48234496 exceeds 10% of free system memory.

2022-12-04 20:26:40.447838: W tensorflow/core/framework/cpu\_allocator\_impl.cc:80] Allocation of 12058624 exceeds 10% of free system memory.

2022-12-04 20:26:40.483133: W tensorflow/core/framework/cpu\_allocator\_impl.cc:80] Allocation of 12058624 exceeds 10% of free system memory.

Dealing with video aayfryxljh.mp4

Face extraction warning : 0 - found face in full frame [(422, 1085, 615, 892)]

Face extraction report of not\_found : 1

Face extraction report of no\_face : 0

Predicting aayfryxljh.mp4

Dealing with video acazlolrpz.mp4

Face extraction warning : 0 - found face in full frame [(423, 1474, 584, 1314)]

Face extraction report of not\_found : 1

Face extraction report of no\_face : 0

Predicting acazlolrpz.mp4

Dealing with video adohdulfwb.mp4

Face extraction warning : 0 - found face in full frame [(148, 969, 379, 738)]

Face extraction report of not\_found : 1

Face extraction report of no\_face : 0

Predicting adohdulfwb.mp4

Dealing with video ahjnxtiamx.mp4

Face extraction warning : 0 - found face in full frame [(337, 892, 529, 700)]

Face extraction report of not\_found : 1

Face extraction report of no\_face : 0

Predicting ahjnxtiamx.mp4

Dealing with video ajiyrjfyzp.mp4

Face extraction warning : 0 - found face in full frame [(423, 1403, 584, 1243)]

Face extraction warning : 99 - found face in full frame [(405, 1385, 566, 1225)]

Face extraction report of not\_found : 2

Face extraction report of no\_face : 0

Predicting ajiyrjfyzp.mp4

Dealing with video aktnlyqpah.mp4

Face extraction warning : 0 - found face in full frame [(328, 917, 559, 686)]

Face extraction report of not\_found : 1

Face extraction report of no\_face : 0

Predicting aktnlyqpah.mp4

Dealing with video alrtntfxtd.mp4

Face extraction warning : 0 - no face

Face extraction warning : 11 - no face

Face extraction warning : 22 - no face

Face extraction warning : 33 - no face

Face extraction warning : 44 - no face

Face extraction warning : 55 - no face

Face extraction warning : 66 - no face

Face extraction warning : 77 - found face in full frame [(146, 511, 221, 436)]

Face extraction warning : 88 - found face in full frame [(293, 1005, 427, 872)]

`aayfryxljh` video class prediction : 0.9642857142857143

`acazlolrpz` video class prediction : 1.0

`adohdulfwb` video class prediction : 1.0

`ahjnxtiamx` video class prediction : 1.0

`ajiyrjfyzp` video class prediction : 0.9642857142857143

`aktnlyqpah` video class prediction : 1.0

`alrtntfxtd` video class prediction : 0.8571428571428571

`aomqqjipcp` video class prediction : 0.9666666666666667

PS C:\Users\MEGHANA\Downloads\MesoNet>

**Explanation of result-……**

**Conclusion:**

* The dangers of face tampering in video are widely recognized. Two possible network architectures to detect such forgeries efficiently and with a low computational cost.
* In addition, access to a dataset devoted to the Deepfake approach is given. Our experiments show that our method has shown best results by using Face2Face videos under real conditions of diffusion on the internet.
* One fundamental aspect of deep learning is to be able to generate a solution to a given problem without the need of a prior theoretical study.
* However, it is vital to be able to understand the origin of this solution in order to evaluate its qualities and limitations.
* We understood that the eyes and mouth play an important role in the detection of faces forged with Deepfake. We believe that more tools will emerge in the future toward an even better understanding of deep networks to create more effective and efficient ones.

**Future Work:**

The present work could be sufficiently efficient to detect forged images, but the run time could be a draw back. If the data set chosen is small it is preferrable to chose pipelines like MobileNet rather than TensorFlow for smaller applications.

**References:**